

IN THE CLAIMS:

1. (Currently Amended) A power amplifier module comprising:
 - a power amplifier circuit (201) having a power supply regulated output power level;
 - a power supply transistor (207) coupled to the power amplifier circuit (201) and operable to control a power supply to the power amplifier circuit (201) in response to a drive signal;
 - a drive circuit (209) coupled to the power supply transistor (207) and operable to generate the drive signal in response to a power level input signal;characterized by further comprising:
 - means (211) for determining an operating characteristic of the power supply transistor (207); and
 - a control circuit (213) coupled to the drive circuit (209) and operable to control the drive signal in response to the operating characteristic.
2. (Original) A power amplifier module as claimed in claim 1, wherein the operating characteristic is a saturation characteristic.
3. (Currently Amended) A power amplifier module as claimed in ~~any previous~~ claim 1, wherein the operating characteristic is an operating gain characteristic.
4. (Currently Amended) A power amplifier module as claimed in ~~any previous~~ claim 1, wherein the control circuit (213) comprises a negative feedback loop from the means for determining (211) to the drive circuit (209).
5. (Currently Amended) A power amplifier module as claimed in ~~any previous~~ claim 1, wherein the power supply transistor (207) is a Field Effect Transistor (FET).
6. (Currently Amended) A power amplifier module as claimed in claim 5, wherein the control circuit (213) is operable to control the drive signal to substantially prevent the power supply transistor (207) from entering a FET linear region operating state.
7. (Currently Amended) A power amplifier module as claimed in ~~any previous~~ claim 6, wherein the means for determining (211) comprises a sense transistor (329) operable to detect a drain- gate voltage of the power supply transistor (207).

8. (Currently Amended) A power amplifier module as claimed in claim 7, wherein the sense transistor (329) is operable to conduct a current if the power supply transistor (207) enters a FET linear region of operation and the control circuit (213) is operable to control the drive signal in response to the current.

9. (Currently Amended) A power amplifier module as claimed in claim 8, wherein the sense transistor (329) conducts current if a drain-source voltage of the power supply transistor (207) is below a gate-source voltage minus a threshold voltage of the power supply transistor (207).

10. (Currently Amended) A power amplifier module as claimed in claim 8, or 9 wherein the control circuit (213) is operable to reduce an absolute amplitude of the drive signal in response to the sense transistor (329) conducting the current.

11. (Currently Amended) A power amplifier module as claimed in ~~any previous~~ claim 8, to 10 wherein a gate of the sense transistor (329) is connected to a gate of the power supply transistor (207) and a source of the sense transistor (329) is connected to a drain of the power supply transistor (207).

12. (Currently Amended) A power amplifier module as claimed in ~~any previous~~ claim 7, to 11 wherein the sense transistor (329) has a threshold voltage similar to the threshold voltage of the power supply transistor (207).

13. (Currently Amended) A power amplifier module as claimed in ~~any previous~~ claim 7, to 12 wherein the control circuit (213) comprises an output transistor (331) coupled to the sense transistor (329) and to a signal junction in the drive circuit (209) such that if the sense transistor (329) conducts current, the output transistor (331) becomes active and causes a signal level at the signal point to be reduced.

14. (Currently Amended) A power amplifier module as claimed in claim 13, wherein the sense transistor (329) is connected to a first input of a current image circuit (333, 335) and the output transistor (331) is connected to a second input of the current image circuit (333, 335).

15. (Currently Amended) A power amplifier module as claimed in ~~any previous~~ claim 11, wherein a supply voltage for the power supply transistor (333, 335) is a variable voltage.

16. (Currently Amended) A power amplifier module as claimed in ~~any previous claim 14~~, wherein the power supply transistor (333, 335) is a bipolar transistor

17. (Currently Amended) A power amplifier module as claimed in claim 16, wherein the control circuit (213) is operable to control the drive signal to substantially prevent the power supply transistor (333, 335) from entering a bipolar transistor saturated region.

18. (Currently Amended) A power amplifier module as claimed in claim 16, or 17 wherein the means for determining (211) comprises a bipolar sense transistor operable to detect a collector- base voltage of the power supply transistor (333, 335).

19. (Currently Amended) A Time Division Multiple Access radio comprising:
means for generating a power ramp signal;
a power amplifier circuit (201) having a power supply regulated output power level;
a power supply transistor (207) coupled to the power amplifier circuit (201) and operable to control a power supply to the power amplifier circuit (201) in response to a drive signal;
a drive circuit (209) coupled to the power supply transistor (207) and operable to generate the drive signal in response to the power ramp signal;
characterized by further comprising:
means for determining (211) an operating characteristic of the power supply transistor (207); and
a control circuit (213) coupled to the drive circuit (209) and operable to control the drive signal in response to the operating characteristic,